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Transportation Infrastructure Investment Opportunities for State Government Pension Plans

Contributors:
Christina Currier
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Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701
512-463-6086
512-463-9389 fax
www.TxDOT.gov

Transportation Infrastructure Investment Opportunities for State Government Pension Plans

Around the world, government pension plans are investigating an emerging class of investments focused on infrastructure. This alternative asset class includes economic and social infrastructure, the former including transportation (road, bridges, rail, ports, etc.) and utilities, and the latter including healthcare and educational facilities. Infrastructure investment, particularly in transportation, has the potential to provide strong, steady returns, and pension plan administrators should embrace this new asset class.

In the United States, more than $2 trillion in assets are held by nearly three thousand public retirement systems, which serve state and local government employees, teachers, police and firefighters.[1] In Texas alone, there are 414 public (local and state government) pension plans with total assets of $188.8 billion in October 2006.[2] These assets are of interest to state transportation departments as potential funding sources because states are starting to rely on private funding to build and maintain their roadways. This paper will examine why infrastructure investment is critical, pension plan regulations and investment policies, firms and pension funds that invest in infrastructure, current transportation infrastructure investment opportunities in the United States, and examples of Texas pension plan investments.

The Critical Need for Infrastructure Investment

Right now, federal and state funding for transportation needs in the United States is inadequate to meet the needs of a growing population. As congestion gets worse all across the country, states are searching for new sources of mobility funding. A Reason Foundation study, "Building Roads to Reduce Traffic Congestion in America's Cities: How Much and at What Cost," states that U.S. freeways and arterials need 104,000 additional lane miles of capacity to relieve congestion. The number of lane miles needed is 6 percent more than current capacity, and would cost a projected total of $533 billion over 25 years to build.[3]

Another survey by the National Chamber Foundation estimates that the "investment gap" is somewhere between $500 billion (to merely maintain the system at current conditions and performance) and $1.1 trillion (to make cost-beneficial improvements that expand economic growth) over the next 10 years.[4] State departments of transportation need to find new ways to fund mobility projects, and public-private partnerships that involve funds from pension plans are one tool in the toolbox.

Pension Plan Involvement in Infrastructure Investment

Positive reasons for public pension plans to invest in infrastructure include the possibility of an estimated rate of return in the mid to low teens, steady income, and the opportunity to invest in an asset that pension plan members might actually use on a regular basis (toll roads, toll bridges, etc.). A downside to investing in infrastructure is the risk involved. The biggest risk is in regulation. Investors must know that their deal with a state department of transportation or a public utility will be upheld and enforced and not cancelled before the contract end date. Some investments also carry a physical risk. If a hurricane or earthquake damages a roadway, the investors would have to pay to fix the road.[5] Additionally, the lack of historical data to determine a rate of return is a concern.

Pension plans consider the infrastructure investment asset class as an alternative to traditional asset classes such as stocks and bonds. The Public Fund Survey Summary of Findings for FY05 found that of the 90 public pension fund systems for which data is available, alternative asset allocation is only 3.8 percent per fund, an average which is somewhat distorted since many of the 90 plans surveyed do not invest in alternative assets.[6] As pension plans seek to strengthen their portfolios, more are looking into opportunities such as transportation infrastructure due to their long-term nature. Arthur Rakowski, who designed the Macquarie European Infrastructure fund, says that infrastructure instinctively makes sense for long-term patient capital since underlying assets will have a place in the economy forever, and because their relatively stable cash-flow is a strong match for investors looking for a predictable return.[7] The different ways for pension plans to invest in infrastructure include the following: through publicly or privately traded infrastructure funds, directly through public-private partnerships (PPPs), or outright buying and managing some type of infrastructure.[8]

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Public Pension Plan Regulations and Investment Policies

Public pension plans are governed primarily by state and local laws, not federal. In the United States, small portions of the federal Internal Revenue Code (IRC) apply to the fiduciary duties and vesting of public pension plans. IRC Section 401 states that no part of plan assets may be used for purposes other than the exclusive benefit of employees and beneficiaries. This is known as the exclusive benefit rule.[9] Generally, state law determines how public pension plans will be administered and who may be on the board of trustees for the plans. Each separate pension plan then has its own investment policy.

Reasons to invest in infrastructure:

- *Possibility of an estimated rate of return in the mid to low teens,*
- *Steady income, and*
- *The opportunity to invest in an asset that pension plan members might actually use on a regular basis.*

Public pension plans typically hire investment managers to determine how to invest their assets. The investment managers provide their recommendations to pension plan board members on how to invest funds. In the United States, pension fund asset allocations typically include investments in domestic equities, international equities, fixed income (bonds), and alternative investments. Each asset allocation has a different rate of return based on risk. Bonds are very low risk, but alternative investments such as private equity and real estate are much riskier. Public pension plan boards of trustees vote on asset allocation, and often take their time investigating possible asset investments. They must have the right mix of assets in order to obtain good returns.

Some public pension plans are able to buy an infrastructure asset outright but other plans may not have a fee simple interest in an asset. They may invest through an infrastructure fund (public or private) managed by an investment firm, or they may even buy into an asset if the ownership is by a limited partnership (a type of private equity).[10] In this partnership, investors such as public pension plans are the limited partners and the fund managers are the general partners. General partners specialize in finding, structuring, and managing equity investments in privately held companies or public companies seeking to raise additional private capital.[11] The general partner's history, ownership, management team, investment strategy, and fund terms and conditions are also important factors to consider when a pension fund is deciding whether or not to invest. Infrastructure investment could be considered private equity if a pension fund enters into a limited partnership, or it could be domestic or international equity if a fund purchases stock in a publicly traded company that invests in infrastructure.

Infrastructure Investment Firms

When determining how to invest their assets, pension plans want to maximize investment returns without undue risk of loss. Infrastructure investment is becoming more common in Canada and Europe, but is a new concept to pension plans in the United States. Pension plans are looking for competitive returns on their investment for their members. Investment in companies and funds that focus primarily on infrastructure (toll roads, bridges, electric transmission grids, etc.) are long term (typically a minimum of 20-30 years) and will provide steady income to pension plans. Since this alternative asset class is still relatively new, the average rate of return is not known but is conservatively estimated to be 12-16 percent.

Macquarie Securities

There are several companies that are actively marketing infrastructure investment to pension plans around the world. One company, Macquarie Securities, founded in Sydney, Australia, has been successful in recruiting pension plans to invest in Macquarie's private and publicly traded infrastructure funds. Globally, they manage $30 billion in infrastructure investments with $12-14 billion invested in toll roads and transportation.[12] Macquarie also has infrastructure funds that are traded on the Australian Stock Exchange including Macquarie Infrastructure (MIG), Macquarie Airports (MAP), and Macquarie Communication Infrastructure fund (MCG). In the United States, the publicly traded fund is Macquarie Infrastructure Company (MIC). Most public pension plans that invest in Macquarie are interested in the privately held Macquarie Infrastructure Partners.

The Macquarie Infrastructure Partners fund includes at least 45 investors and 25 are located in the United States. Confidentiality agreements preclude the naming of the investors but the goal is for the fund to have $2 billion to invest. The focus will be on investments in the United States and Canada. The Macquarie European Infrastructure fund has investors from all over the world and includes some pension plans in the United States. In December 2006, Macquarie's European Infrastructure II fund received approval from the European Union to buy Techam AG, a company that reads heat and water meters in 6.4 million European households, for $1.8 billion US.[13] Utility infrastructure investment is currently more common than investment in toll roads in this fund.

Carlyle Group

In March 2006, the Carlyle Group, a global private equity firm, established a team to invest in infrastructure including transportation, water facilities, airports, and bridges. The team will be headed by Robert Dove and Barry Gold. Mr. Dove said, "The proven use of public-private partnerships and concessions in the U.K. and on continental Europe is now emerging as a means of financing U.S. infrastructure. There is a dire need to bring private capital to the development and maintenance of public infrastructure throughout the U.S. and we believe this effort will be well received." Carlyle's infrastructure team will invest mainly in U.S. infrastructure ranging from $100 million to $1 billion. Like other firms, they will look at PPPs, long term concessions, and buying outright.[14]

Goldman Sachs

On December 28, 2006, Goldman Sachs announced that it had raised $6.5 billion for its first infrastructure fund, GS Infrastructure Partners.[15] The fund will only invest in infrastructure and has attracted interest from pension funds, banks, and insurers. Goldman Sachs will contribute some existing investments it owns to the fund including its participation in the Associated British Ports and its investment in the consortium that bought Kinder Morgan, the US pipeline operator, this year (Borealis Infrastructure and the Ontario Teachers' Pension Plan are also joint owners). About $750 million of Goldman Sachs' own money went into the fund.

> *Canadian pension plans have taken the lead in infrastructure investment and could serve as excellent examples for U.S. pension plans.*

Pension Plans that Invest in Infrastructure

Canada

In Canada, the CPP Investment Board is actively pursing infrastructure investment. The CPP Investment Board is a professional investment management organization with the purpose of investing the assets of the Canada Pension Plan (CPP). The CPP fund is $98.6 billion. Income from the money that they invest today will be used by the Canada Pension Plan to help pay pensions beginning in 2022.16 The CPP Investment Board assesses infrastructure assets based upon their risk and return profile, since every infrastructure asset is different.

The CPP Investment Board is interested in assets that provide relatively stable long-term returns, operate in strong regulatory environments, have relatively low technology replacement risk, and cannot be easily substituted (for example, investors in a tolled bridge can assume that a non-tolled bridge will not be built right next to the toll bridge due to the cost involved in building another bridge). The types of assets that have these characteristics include electricity transmission and distribution, gas transmission and distribution, water and sewage companies, and certain transportation assets, such as toll roads, bridges and tunnels, airports, and ports. The board typically seeks out investments that operate under long-term contractual agreements, or within transparent and dependable regulatory frameworks that balance the needs of both ratepayers and investors.[17] Currently, the Board is targeting investments that will require them to contribute $200 million to $1 billion in equity capital.

United States

In the United States, only a few public pension plans are publicly announcing that they are investing in infrastructure. As of June 30, 2005, the Illinois State Board of Investments had $467 million invested in alternative investments, including infrastructure. This represents only 4 percent of the board's asset allocation with a policy target of investing 5 percent in the future.[18]

In April 2006, California State Treasurer Phil Angelides proposed that California pension plans, including the California Public Employees' Retirement System (CalPERS) and the California State Teachers' Retirement System (CalSTRS), invest in urban, smart growth infrastructure projects in California. The types of investments he envisioned, called "Cal-Build," would finance projects that would create jobs and earn a return for the pension funds and taxpayers. The initiative would invest $15 billion--about 5 percent of the two funds' holdings--in California infrastructure projects, including water-supply and conservation projects, toll bridges and tunnels, energy transmissions projects, and other like projects.[19] Angelides has a good track record with innovative thinking about investments. He helped launch the CalPERS California Urban Real Estate investment fund, which encouraged investing in inner cities and underserved communities. CalPERS has committed $3.4 billion and has earned annual returns of 22 percent since 2001.

More recently, CalPERS staff has recommended adding infrastructure as a new asset class to its future investment program. Such investments, the staff wrote in an internal memorandum to the Board, "would make CalPERS a player in solving some pressing public policy infrastructure problems."[20] Russell Read, Chief Investment Officer of CalPERS, has mentioned toll roads as one type of infrastructure that might qualify for the pension fund's support. The $153 billion California State Teachers' Retirement System (CalSTRS) has also set up a task force to investigate infrastructure investments as a possible new asset class. The Fund plans to select an independent source of analysis to conduct a thorough due diligence process of the entire infrastructure investment universe before taking a position. “Because we are a public pension plan governed by a board, our research process is very lengthy and detailed,” a spokesman said.

The Type of Infrastructure Assets Pension Plans Are Investing In

Ontario Teachers’ Pension Plan

Some Canadian pension plans have already directly bought infrastructure. For US$2.4 billion, the Ontario Teachers’ Pension Plan announced in November that it is acquiring its first piece of Canadian infrastructure--a freight container terminal operation on Canada’s Pacific Coast. The board signed an agreement with Orient Overseas (International) Limited of Hong Kong and is the sole acquirer. “The acquisition represents solid, robust assets, has little vulnerability to market or economic vagaries and features a very attractive growth profile that will surely serve us well into the future,” said Jim Leech, Senior Vice President of the private investment arm of the pension plan. The US$84 billion Ontario Teachers’ Pension Plan fund began investing in infrastructure in 2002. The combined value of the fund’s infrastructure and timberland assets (within their Inflation Sensitive Investments Fund) is US$12 billion.[21]

Pension funds should be afforded opportunities to invest in infrastructure investment funds that will be involved in the financing and building of Trans-Texas Corridor segments.

OMERS

Borealis Infrastructure manages infrastructure investment for OMERS, a Canadian pension plan with more than $41 billion in net investment assets and which provides services for over 364,000 active and retired members.[22] Infrastructure is currently close to 10 percent of the OMERS asset mix, with an eventual goal of 15 percent. Investments in the United States include joint ownership in the Detroit River Rail Tunnel and the Express and Platte pipeline system that leads from Alberta to Chicago.[23]

Sebastian Sherman, Vice President of Borealis Infrastructure, spoke about the firm’s involvement in this evolving field and its plan to invest in toll roads. Sherman stated that OMERS, through Borealis Infrastructure, was the second highest bidder for the Chicago Skyway concession. OMERS definitely has an interest in toll roads and is willing to take the risk of investing in new construction if the rate of return is high. Sherman said, “Rate of return is a judgment call with no hard numbers. It is a gray area and depends on risk.”[24] OMERS currently invests in mature infrastructure that provides historical data for assessment of investment. However, existing infrastructure has a lower rate of return (estimated to be in the low teens). Mr. Sherman stated that Texas is an attractive place to invest due to a growing population base, which will lead to more vehicle ownership, and thus more congestion and demand for the use of toll roads.

Transportation Infrastructure Investment Opportunities in the United States

In order to increase mobility, state departments of transportation around the United States are in dire need of new funding to build roads. The Texas Department of Transportation (TxDOT) and other transportation leaders in Texas have identified a transportation funding gap of $86 billion over the next 25 years. TxDOT plans to use all available financial tools to build transportation projects including the aggressive pursuit of PPPs and other new financial tools to close the funding gap. Texas needs funding from the private sector such as pension plans to build better roads and alleviate congestion. Private sector capital will allow the public sector to direct state and federal dollars to other projects and enable states to speed up the completion of transportation projects.

What kind of transportation infrastructure projects are seeking funding from private sources such as pension plans and infrastructure investment funds? In Texas, the development that has generated the most interest from investors is the Trans-Texas Corridor (TTC). TTC is a proposed multi-use, statewide network of transportation routes in Texas. Private funding is absolutely essential to the TTC becoming a reality. In 2004, Cintra-Zachry, a consortium led by Spanish and Texas firms, identified a plan to relieve congestion on Interstate 35 by investing $6 billion to build a state-owned toll road. The consortium would also pay the state $1.2 billion for the investment opportunity. In September 2006, TxDOT released a plan proposing the first phase of Trans-Texas Corridor 35 (TTC-35) to include a connection to I-35 south of San Antonio and a long-sought loop for the Dallas-Fort Worth area.[25] Construction could begin in 2011 after environmental clearance determines the ultimate alignment. Segments of the TTC-35 will be built at different times, possibly by different companies and through different financial means, but almost all of the development will include some type of private funding. Pension funds should be afforded opportunities to invest in infrastructure investment funds or in limited partnership with companies that will be involved in the financing and building of TTC segments.

Texas Pension Plans: The Next Frontier?

TRS

In Texas, public pension plans are not investing in infrastructure at this time, but they are investigating this new asset class. The investment policies for Texas plans are straightforward and provide the basis for their investment strategy. The guiding principle for the Texas Teacher Retirement System (TRS) is to control risk through diversification by prudently setting and modestly deviating from normal positions to enhance returns.[26]

In November 2006, Texas Governor Rick Perry asked the TRS board to consider investing up to $600 million in young companies receiving money from the new Emerging Technology Fund created by the Texas Legislature.[27] Perry's deputy chief of staff, Phil Wilson, said investing "is at the complete discretion of the TRS. They can choose to invest or not to invest…We're just offering them to be part of an emerging market opportunity and to invest in that." In response, TRS Board of Trustees Chairman Jarvis Hollingsworth said, "…we want all of our TRS members to rest assured that regardless of the source of any potential investment, be it the Governor's office or a private investment fund, each potential investment presented to the TRS board undergoes the same thorough due diligence analysis by our staff and our advisors."[28]

TRS is the state's largest public pension fund, which saw an increase of $6.5 billion in FY06 (a 7 percent increase). The fund now has $100.2 billion in assets and, in FY06, paid out $5.6 billion in benefit payments.[29] The rate of return on investments for the year that ended August 31, 2006 was 9.7 percent, due to strong returns in the equity market. The rate of return for FY05 was 14.4 percent. TRS targeted an 8.5 percent investment allocation in alternative investments but actually invested 4.3 percent in FY06. Currently, the TRS Board of Trustees is pursuing alternative investments in private equity, absolute return, and real estate funds, but not specifically infrastructure. The first fund investments in real estate were made in February 2006 and total $750 million. The total market value of all alternative investments is now $4.3 billion. The TRS Board of Trustees is analyzing different types of alternative investments but has not allocated any funds towards infrastructure investment.

ERS

Like the TRS, the Employee Retirement System of Texas (ERS) has an investment policy that guides asset allocation. The ERS Board of Trustees will consider investment instruments appropriate for the system and deemed to be prudent based on:

- Their consistency with investment policy and portfolio objectives;
- Their application to the portfolio's diversification;
- Staff and/or advisor competency in evaluating and trading the securities;
- Consideration of their liquidity within the portfolio;
- The cost of including them in the program; and
- Futures and options to facilitate risk management and to provide efficiency in investment implementation through lower transaction costs and lower turnover or to provide higher correlation to the benchmark index returns.[30]

ERS had an investment portfolio at the end of FY06 of $22.3 billion and a return of 8.8 percent for the year.[31] ERS began investing in Real Estate Investment Trusts (REIT) in 2005, but that is the only "alternative asset" currently in their portfolio. Every five years, the ERS Board of Trustees votes on the asset allocation for the fund, but the allocation is reviewed annually if the staff thinks a certain allocation should be adjusted. In 2006, ERS Director of Investments Kathy Reissman presented the Goldman Sachs Infrastructure fund to the Investment Advisory Committee, but they declined to invest before the Board adjusted the asset allocation. Reissman was interested in this fund due to its diversification in the types of infrastructure assets and because investments would not be focused on one location. Though the committee and the board are interested in infrastructure, it will take a few years before investment can occur. ERS has stated that a consultant specializing in infrastructure investment will probably be hired to educate the board and recommend investments.

Infrastructure investment is often considered private equity, and ERS has publicly shown an interest in private equity investment. The Board of Trustees discussed private equity and real estate investments at the October 19, 2006 meeting. Gary Robertson of Callan Associates explained that the key reason why funds invest in private equity is to get rates of return that are higher than you can get in public equities; however, important considerations when investing in private equity are these: reduced liquidity compared to public equities, the complexity of programs, and that it could take up to seven years to obtain a 7 or 8 percent asset allocation target.[32] The Board took no action in October, but at the December 13, 2006 meeting, the Board did vote to "authorize ERS staff to prepare an implementation plan, subject to the Board's approval, that will move the Fund toward an asset allocation that includes private equity and real estate. ERS staff is instructed to prepare the implementation plan and establish the retirement system infrastructure in order to work towards the allocation targets between Mix 3 and Mix 4 in Callan Associates' Asset Allocation and Liability Study dated April 2004."[33] ERS will aim for an asset allocation of 8 percent for real estate and between 8 and 9 percent for private equity, which could include infrastructure investment.

Conclusion

Though public pension plan investment in infrastructure is still new within the United States, it is expected to take off in the near future. Canadian pension plans have taken the lead in infrastructure investment and could serve as excellent examples for U.S. pension plans. There are billions of dollars in untapped American capital, which, if bought by pension plans and investment firms, can not only provide greater rates of return for investors, but also provide funding to state departments of transportation for mobility projects. Twenty-one U.S. states and one territory have passed legislation allowing public-private partnerships. Texas is leading the way among these, with planned projects that will bring positive cash flow into the state.

The key for transportation officials is to encourage local and state public pension funds to consider investing in transportation infrastructure. Current pension funds favor more traditional investments, but alternative investments compete strongly over the long-term if funds are willing to take the risk. With the need for infrastructure only growing, pension plans can find a promising alternative in this burgeoning asset class.

Christina Currier is a senior researcher for the Texas Department of Transportation in the Government and Business Enterprises Division. She may be reached at ccurri1@dot.state.tx.us or 512-416-2307.

Endnotes

1 U.S. Census Bureau, Employee-Retirement Systems of State and Local Governments: 2002. GC02(4)-6, 14 (2004). and Keith Brainard. Public Funds Survey Summary of Findings for FY 2005. National Association of State Retirement Administrations. September 2006.

2 Texas Pension Review Board Biennial Report (2005-2006). p. 19. Online. Available: http://www.prb.state.tx.us/pls/reports/biennial/Biennial%202006.pdf.

3 Hartgen, David, and Gregory Fields. Reason Foundation. "Building Roads to Reduce Traffic Congestion in America's Cities: How Much and at What Cost?" Online. Available: http://www.reason.org/ps346.pdf.

4 National Chamber Foundation. "Future Highway and Public Transportation Financing." November 2005.

5 Global Pensions. "Building Returns on Infrastructure Investment." March 2006. Online. Available: http://globalpensions.com/feature/feature_pdf_173.pdf.

6 Brainard, Keith. Public Funds Survey Summary of Findings for FY 2005. National Association of State Retirement Administrations. September 2006.

7 Global Pensions. "Building Returns on Infrastructure Investment." March 2006. Online. Available: http://globalpensions.com/feature/feature_pdf_173.pdf.

8 Federal Highway Administration. Online. Available: http://www.fhwa.dot.gov/PPP/defined.htm#1.

9 Internal Revenue Code, TITLE 26, Subtitle A, CHAPTER 1, Subchapter D, PART I, Subpart A, Sec. 401.

10 Private equities are equity securities of unlisted companies. Private equities are generally illiquid and thought of as a long-term investment. Private equity investments are not subject to the same high level of government regulation as stock offerings to the general public. Private equity is also far less liquid than publicly traded stock. Online. Available: http://www.fundingpost.com/glossary/venture-glossary.asp.

11 Texas Pension Review Board Biennial Report (2005-2006). p. 19. Online. Available: http://www.prb.state.tx.us/pls/reports/biennial/Biennial%202006.pdf.

12 Phone Interview conducted by Christina Currier on 20 December 2006.

13 Freedman, Jennifer M. "Macquarie Bid to Buy Techem for EU1.36 Billion Wins EU Approval." Bloomberg News. 12 December 2006. Online. Available: http://www.bloomberg.com/apps/news?pid=20601100&sid=aNW8ht.XvgHc&refer=germany.

14 The Carlyle Group Press Release. 10 March 2006. Online. Available: http://www.thecarlylegroup.com/eng/news/l5-news3323.html.

15 Larsen, Peter. "Goldman infrastructure fund raises $6.5bn." Financial Times. 28 December 2006. Online. Available: http://www.ft.com.

16 CPP Investment Board. "About Us." Online. Available: http://www.cppib.ca/About_Us/.

17 CPP Investment Board. "CPP Investment Board Investment Strategy." Online. Available: http://www.cppib.ca/files/PDF/CPPIB_Infrastructure_Backgrounder_November15_2006.pdf.

18 Illinois State Board of Investments. "Compliance Examination." 30 June 2005. Online. Available: http://www.state.il.us/AUDITOR/ISBI%2005%20Comp%20-%20Full.pdf.

19 California Office of the Treasurer. Online. Available: http://www.treasurer.ca.gov/calbuild/index.asp.

20 CalPERS memo. "Proposed Inflation-Linked Investment Asset Class." 22 January 2007.

21 Ontario Teachers Pension Plan News Release. 23 November 2006. Online. Available: http://www.topp.com.

22 OMERS. Online. Available: http:// www.omers.com.

23 Terasen Pipelines website. Online. Available: http://terasenpipelines.com/data/2/rec_docs/500_Express_Platte.pdf.

24 Phone interview conducted by Christina Currier with Sebastian Sherman. 3 January 2007.

25 Texas Department of Transportation. Press release. 28 September 2006. Online. Available: http://www.keeptexasmoving.com/publications/files/TTC-35%20MDP.pdf.

26 Teacher Retirement System of Texas. Comprehensive Annual Financial Report 2005. Investment Overview. Online. Available: http://www.trs.state.tx.us/investments/documents/investment_overview.pdf.

27 Elder, Robert. "Pension fund urged to help startups." Austin American-Statesman. 16 November 2006.

28 Statement by TRS Board Chairman Jarvis Hollingsworth. 14 December 2006. Online. Available: http://www.trs.state.tx.us/about/documents/hollingsworth_statement_technology_fund.pdf.

29 Teacher Retirement System of Texas. Comprehensive Annual Financial Report 2006. Online. Available: http://www.trs.state.tx.us/about/documents/CAFR.pdf#CAFR.

30 Employee Retirement System of Texas. 2005 Annual Financial Report. p. 68. Online. Available: http://www.ers.state.tx.us/AboutERS/CAFR2005_Investment.pdf.

31 Employee Retirement System of Texas. Comprehensive Annual Financial Report 2006. Online. Available: http://www.ers.state.tx.us/AboutERS/CAFR2006.htm

32 Employee Retirement System of Texas. Board of Trustees Minutes. 19 October 2006. Online. Available: http://www.ers.state.tx.us/CalendarOfEvents/BOTIACMinutes20061019.pdf.

33 Employee Retirement System of Texas. Board of Trustees Minutes, 13 December 2006. Online. Available: http://www.ers.state.tx.us/calendarofevents/BOTMinutes20061213.pdf